

DMJ casebook series

Automatism and hypoglycaemia

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Abstract

A case of a detained person (DP) suffering from insulin dependant diabetes, who subsequently used the disorder in his defence as a reason to claim automatism, is discussed. The legal and medical history of automatism is outlined along with the present day situation. Forensic physicians should be aware when examining any diabetic that automatism may subsequently be claimed. With this in mind, the importance of relevant history taking specifically relating to diabetic control and symptoms is discussed.

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1. The case

The author was asked to examine a male detained in custody at 0130 h who had been in a fight and allegedly assaulted his wife with a knife. The main request for the involvement of a forensic physician (FP) was to record both their injuries and to take blood for DNA purposes. The male was 51 years old with a 30 year history of insulin dependent diabetes mellitus. He was prescribed short acting insulin Human Actrapid 10 U in the morning and 10 U in the afternoon with longer acting insulin Human Monotard 20 U in the morning and 20 U in the afternoon. It was noted that he last ate between 1900 and 1930 h and stated that he could not remember if he had taken his usual afternoon insulin or not. Unfortunately, it was not recorded when he last actually did inject himself with insulin and also no record was made in relation to previous experiences of hypoglycaemia. He also admitted to drinking spirits and beer that day, having stopped drinking alcohol at about 1900 h. He was fully aware as to why he was in custody, but would not go into any details of the alleged assault. The investigating officer stated that he had assaulted his wife with a knife that evening.

The only significant injury to the accused was an incised wound to the pulp of his right thumb. It was noted that he smelt of alcohol, was alert and orientated (GCS 15), his speech was coherent and he walked unaided with no stagger. His finger prick blood glucose measurement was 17 mmol/l. He was not clammy, there was no evidence of head injury and BP and pulse were unremarkable. Blood was taken for DNA with the appropriate consent (a formal blood glucose sample was not taken).

His wife was then examined at the local hospital. It was noted that she had several minor superficial incised wounds to both hands and her neck and there was a deeper wound on her left forearm highly suggestive of a defence injury, which required surgical exploration. She stated that she often saw her husband suffering from hypoglycaemic attacks, the last one having occurred earlier that morning. However, she stated that his behaviour during the evening of the assault was nothing like that experienced previously during any hypoglycaemic episode.

The case went to the High Court. The only contribution in the court made by myself was to confirm the examination findings of the accused and discuss how accurate the finger prick blood test was (BM Test). This acts as a clinical guide only and is not adequate for ascertaining hypoglycaemia³. This perhaps raises the question as to whether formal venous glucose sampling should be taken at the time

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of examination. This would then negate any discussion over the accuracy of finger prick testing, but may then prove irrelevant (unless obvious hypoglycaemia) in proving hypoglycaemia at the time of the assault, since hypoglycaemia may spontaneously correct itself without additional intake of sugar⁴.

The main thrust of the defence was that the accused had committed the assault while he was hypoglycaemic and so had no control over his actions, i.e., it was an automatic act, or an automatism. The jury in the end found the defendant guilty of serious assault with threat to endanger life and was given a three year custodial sentence. The plea of automatism therefore did not hold.

2. Medical definition of automatism

Automatic—“done without conscious thought” The Concise Oxford Dictionary.

Defining automatism is not easy, since defining what is conscious or unconscious in relation to an action can also prove to be contentious. As early as 1940, Hinsie and Shatzky gave a definition of automatism as “a condition in which activity is carried out without conscious knowledge on the part of the subject”. However, this then posed the difficult question as to how we define “conscious”. There have been both medical and psychological models to try and specifically explain this term, but still no clear definition appears to exist, perhaps since it is such a subjective dynamic state of mind. Fenwick reviewed the various definitions of automatism and the following key points are the main features of this definition¹:

1. It is involuntary.
2. There is no control.
3. The behaviour is inappropriate to the circumstances.
4. The act can be seemingly quite complex and purposeful.
5. The individual has no recollection or only partial memory of his or her actions.

3. Legal definition

The legal definition of automatism is based on the fundamental legal concept of *mens rea*. This states that everyone of legal age is presumed by law to be accountable for his or her actions. If the state of mind is missing or *mens rea* absent, then he or she cannot be held accountable for the crime, since no crime has been committed in the eyes of the law. There are three main reasons why *mens rea* may be absent:

1. In the case of mental subnormality where the mind is “innocent” and so cannot be guilty (does not know right from wrong).
2. The mind is diseased through mental illness (the McNaghten rules¹⁵ would apply in this situation).

3. At the time of the act, there was an absence of mind due to other factors, so that any act carried out was “automatic”. In law, this is the defence of automatism.

4. Sane and insane automatism

The law, unlike medicine, divides automatism into two further categories, *sane* and *insane* automatism. This concentrates on the underlying cause of automatism. In medicine, the underlying causes are simply grouped together as “organic” causes, the list of which is comprehensive (e.g., diabetes, epilepsy, brain tumours, drugs and alcohol, head injuries). The legal term sane automatism refers to an involuntary action caused by some *external* factor or influence (e.g., blow to the head, insulin injection), whereas insane automatism refers to an involuntary action resulting from some preexisting *internal* factor within the body (e.g., brain tumour, epilepsy). These legal terms can be quite confusing medically and often best left for the legal profession to argue over, but the FP’s should be aware of the differences. The reason for the differing legal view is more related to the differing outcomes if put forward as a defence. A successful defence of sane automatism results in the defendant walking free, while that of insane automatism results in the defendant being recommended for indefinite admission to a state mental hospital, since the “mind was diseased” (*mens rea* absent). This sentencing reflects an emphasis more on public safety and perhaps the incorrect conclusion that insane automatism is a permanent disease of the mind and reoffending may occur. To the medical person, this may seem illogical.

5. The legal history of sane and insane automatism

Even within the legal profession, confusion over what is sane and what is insane has occurred for many years. In the case of *R v. Charlson* (1955)⁵, in which Charlson, who suffered from a brain tumour, assaulted his son and threw him out of a window, brain tumor and epilepsy were defined as sane automatisms and the defendant was acquitted. Two years later in the case of *R v. Kemp* (1957)⁶, Kemp suffered from cerebrovascular disease of the brain and made an irrational and involuntary assault upon his wife with a hammer. It was felt that the automatic act carried out in this case was due to a disease of the mind and therefore was an insane automatism, contrary to the conclusion in the Charlson case. As a result of the Kemp case and other later cases where epilepsy had previously been put forward as a defence of sane automatism (based on the verdict of *R vs. Charlson*), subsequent verdicts were overturned. In the case of *Bratty v. A-G for N. Ireland* (1963)⁷, Bratty was charged with killing a girl who was a passenger in his car. His defence was that he might be suffering from a form of epilepsy resulting in his losing control. The judge dismissed the plea of automatism, but on appeal, Lord Denning ruled that any mental disorder which had manifest

itself in violence and was prone to recur was a disease of the mind and an insane automatism. However there was still medical doubt as to whether epilepsy truly existed or not in this case. This ruling was further tested in the case of *R v. Sullivan* (1983)⁸, where Sullivan, a known epileptic, assaulted an elderly lady following a seizure. Sullivan did not want to risk being sent to a state mental hospital which may have occurred if he based his defence on automatism. His lawyers persuaded him to plead guilty. The case went to the court of appeal and the House of Lords, but the appeal was rejected and so confirmed the ruling (as in the *Bratty* case) that epilepsy was a disease of the mind and thus an insane automatism.

In relation to hypoglycaemia and automatism, the case of *R v. Quick* (1973)⁹ has contributed to the present definition. Quick was a nurse working in a mental hospital who suffered from diabetes and had been charged with assaulting a patient while hypoglycaemic following a small breakfast and after taking alcohol. Since this was a consequence of an insulin injection (an external factor), the plea of sane automatism was made. However, the judge referring to the *Bratty* case, felt that Quick should plead insanity due to an existing disease of the mind rather than automatism (again confirming the confusion that existed at that time over these terms). Quick thereupon changed his plea to guilty but appealed. The ruling was later reversed in the court of appeal, since it was felt that diabetes per se did not cause a disease of the mind, but the insulin that was prescribed did, i.e., an external factor. The court also stated that external factors within the control of the individual (alcohol/drugs) would not constitute a defence where the incapacity was self induced, i.e., where recklessness can be shown, a view supported by the legal profession¹⁰.

For the position in Scotland, *Ross v. HM Advocate* 1991¹¹ is a landmark case. Ross had consumed beer that had been laced with LSD and consequently severely assaulted another person. The defence was based on the involuntary ingestion of drugs resulting in automatism due to an external factor. The High Court found that the essential requirements needed for this type of defence were that the accused must have experienced a “total alienation of reason amounting to a complete absence of self control” due to “some external factor which was outwith the accused’s control [and] which he was not bound to foresee”. This still holds today when considering any case of sane automatism.

6. Present state

The present legal understanding of sane automatism is a disorder of the mind caused by an external factor. Insane automatism is a disordered mind due to an internal factor, as described earlier, even if temporary, since the belief is that it may lead to a situation that is prone to recur and may result in violence. This may appear clear to the legal profession, but still remains nonsensical to the medical profession. A brain tumour resulting in automatic behaviour would be classed as an insane automatism resulting poten-

tially to indefinite committal to a state mental hospital. However, this condition may be treatable and in some instances curable. Another example is that of hypoglycaemia caused by an insulin secreting tumor (insulinoma). This would cause a similar state of hypoglycaemia but would be classed as an internal factor, resulting only in the claim of insane automatism, again another potentially curable condition. It has been suggested that the whole classification of automatism be dropped¹. It would certainly seem more sensible to base every judgement on the merits of each case alone and sentencing based on a combined legal and medical assessment as to how conscious the defendant was at the time of the act and the likelihood of recurrence, whatever the underlying cause.

While automatism is clearly a very real condition, it could readily be used as an excuse when in reality it did not exist – could every diabetic or epileptic committing an offence claim automatism? Perhaps the ruling that epilepsy is an insane automatism discourages this practice which is a good thing, but this would not apply to diabetics on insulin.

7. Hypoglycaemia

Diabetics who take insulin or sulphonylureas can suffer from hypoglycaemic attacks (low blood glucose levels). It must be noted that diabetics on diet alone or metformin do not in general get hypoglycaemic attacks, a fact that is often misunderstood both by patients and doctors. During an attack, usually at levels less than 2.2 mmol/l³, a person can suffer from confusion, altered consciousness, memory disturbance, sweating and agitation as a result of neuroglycopenia, the brain cells being low in glucose (neuroglycopenia can exist however with “normal” glucose levels)³. Despite this, the person may still appear to carry out normal activities which can be prolonged and complex². These symptoms can be resolved by giving glucose or may even spontaneously resolve⁴. This is particularly important to know since when a detained person (DP) is seen by the FP, the blood sugar at that time may be back within normal limits. This makes it very difficult to prove hypoglycaemia retrospectively at the time of the alleged incident.

In law, Maher et al.² have suggested two important facts that need to be ascertained before hypoglycaemia can be used as a defence for automatism. It must be demonstrated that:

1. that the hypoglycaemia did not result from a persons own reckless behaviour,
2. that the hypoglycaemia was caused by the insulin and not the illness itself (i.e. diabetes). If both these points can be shown to exist, then a claim of sane automatism can be made.

In Scots law, hypoglycaemia has again been used as a defence. In *Farrell v. Stirling* (1975)¹², a newly diagnosed diabetic was involved in a road traffic accident whilst driv-

ing, and subsequently claimed to have been hypoglycaemic. The diabetic claimed never to have experienced such a condition in the past and so, as a result, was found not guilty of careless driving since he was found by the court in theory to be effectively “not driving” the vehicle. In a later case, *MacLeod v. Mathieson* (1993)¹³, the same circumstances and plea applied, except that the diabetes was not new. However, on this occasion, the sheriff ruled that the driver, despite being hypoglycaemic, was in control of his car and that “the driver knew he was liable to become so disabled without sufficient warning to enable him to control or stop his vehicle without danger to others” i.e. had previously experienced hypoglycaemia and so had been reckless. This is the case today and in a more recent ruling in England, Stark and Rodgers describe a case in which a diabetic was found guilty of a Section 4 RTA 1988 offence, even after appeal, whilst driving under the influence of a therapeutic drug which caused impairment (that drug being insulin resulting in hypoglycaemia)¹⁴. This is a risk factor which both doctors and the general public need to be aware of when prescribing and receiving treatments that may result in impairment.

8. Review of note taking

It is clear that the original note taking was not as comprehensive as it could have been. Certain important facts had been omitted:

1. Whether or not the defendant (not the wife) knew about and had suffered previous hypoglycaemia, and when the last episode had occurred.
2. Whether the defendant got warnings with previous episodes and if so did he check his own blood sugar level to look for this, and act upon it, i.e., take something to eat.
3. Whether he had experienced similar behaviour with hypoglycaemic episodes in the past.
4. Had other external factors been present such as fatigue, stress or infection.

These questions try to ascertain whether the defendant was *reckless* in controlling his diabetes with the prior knowledge of previous hypoglycaemic episodes.

The importance of recording alcohol consumption and at least one finger prick blood glucose level at the time of examination cannot be overstated. Alcohol can cause reactive hypoglycaemia even in non diabetics and so any drowsy drunk should always have a blood glucose estimation. Any examining FP should be aware of these factors described earlier particularly when examining diabetics and not simply just assess fitness for detention per se.

9. Important facts in the history

Whenever a FP is faced with a situation that might lead to a defence of automatism in a diabetic, certain basic facts should be considered¹:

1. Record the type, amount and time of last insulin injection along with recent food intake. Confusion is unlikely with a blood glucose above 2.2 mmol/l².
2. Was the defendant aware of the effects of insulin and the possibility of it causing a hypoglycaemic episode. If not, then this would allow a defence of sane automatism.
3. Did any other internal factors coexist that may make the defendant more sensitive or vulnerable to the effects of insulin (brain or liver disease). This would allow a defence of insane automatism.
4. Was the defendant reckless by either giving too much insulin or taking too little food. Were they reckless by taking alcohol/drugs, the effects of which were known to them already. This reckless behaviour would lessen the defence of automatism.
5. Did any other external factors coexist (stress, fatigue, drugs, infection) of which the defendant was unaware and could increase the risk of hypoglycaemia. This would support a defence of sane automatism.

Applying these facts to the case described, it could be said the defendant was reckless by not knowing whether he had or had not taken his last insulin dose, and also reckless in drinking excessive amounts of alcohol that could affect his blood sugar level. He had experienced previous hypoglycaemic attacks before (a very likely situation if he had been insulin dependent for 30 years) and was aware of the effects that alcohol would have on him. The accused also failed to satisfy the test in *Ross v. HM Advocate* case¹¹ as described earlier. These issues would all negate the defence of automatism. The authors opinion was that diabetes had nothing to do with the assault, he was simply intoxicated and attacked his wife, being fully conscious of this action (*mens rea* present). The court however, makes the final decision based on the evidence put to it.

Every new diabetic on insulin is now well informed about the effects of hypoglycaemia and take responsibility themselves for the care and control of their condition. Indeed, this is the main thrust of the national clinical framework for managing diabetes that has been introduced and it would be very difficult now to prove that a defendant was unaware of the effects of insulin and hypoglycaemia, especially if this information had been recorded at the time. However, people still do suffer profound hypoglycaemic attacks, sometimes without warning, even in previously well-controlled diabetes despite their best attempts at good control. Trying to distinguish the genuine defence of hypoglycaemic automatism from the “lets give it a go” as a defence claim is difficult and for the courts to decide. The FP is present to simply obtain as much information as possible, so that the courts can use the information as one part of the jigsaw in coming to a decision about a defendants culpability.

“*Actus non facit reum nisi mens sit rea*” – the deed does not make a man guilty unless his mind is guilty

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